

REMARKS

Applicants respectfully traverse the rejection of record.

Claims 22-24 are added. The fee for three additional claims in the amount of \$75.00 is enclosed.

Tonar et al., the only cited and relied on prior art, teaches a “pre-polymer solution” (col.25, lines 23-36). The present invention claims a “finely dispersed polymer” (claim 1), “not in solution” (claims 22-24), when “deaerated” (claims 1 and 22-24), but is first in solution when dispersed between the electrodes in the closed space (claim 24).

Applicants found that the prior art pre-polymer solution caused voids. The presently claimed novel method provides for a “dispersed phase” finely dispersed polymer” the methodology eliminates the prior art voids.

The following is a point-by-point analysis of Tonar et al. and the present claims.

Claim 1:

- in col.7, lines 7-10 of '431 a step of pre-polymerizing is mentioned, and such feature of the claimed invention as “producing the initial electrochromic composition in the form of an electrochromic disperse system, comprising at least a suspension and/or colloid” is not mentioned;
- in col. 7, lines 53-55 of '431 finished electrochromic layers are described and such feature of the claimed invention as “the disperse phase is a finely dispersed polymer” (the disperse phase of the electrochromic disperse system, which is the initial electrochromic composition) is not mentioned.

In the claimed invention the finely dispersed polymer is not a polymer matrix in the initial electrochromic composition. As to the claimed invention, the polymer matrix is formed only after dissolving the finely dispersed polymer in an electrochromic solution, that occurs within closed space between electrodes;

- in col. 25, lines 29-30 of '431 degassing an intermediate product by vacuum for producing an initial electrochromic composition is mentioned, wherein the said intermediate product contains pre-polymers, which are not a finely dispersed polymer, and such feature of the claimed invention as "the initial electrochromic composition is deaerated to eliminate the dissolved oxygen and air introduced together with the finely dispersed polymer" is not mentioned. As it was found by the Applicant, the air introduced together with the finely dispersed polymer causes appearance of a plurality of small air-bladders along the full surface of an electrochromic device after dissolving the finely dispersed polymer and clearing up the dim initial electrochromic composition;
- the step of deaerating in the claimed method is functionally related to the step of producing the initial electrochromic composition including the finely dispersed polymer as the disperse phase of the disperse system, as well as with the step of filling the closed space between the electrodes with the already deaerated initial electrochromic composition. Thus the above-mentioned step can not be considered as itself, without its relation with the above said steps.

Claim 4:

- in col. 25, lines 29-30 of '431 vacuumization of an intermediate product for producing the initial electrochromic composition is mentioned, wherein the said intermediate product contains pre-polymers, which are not finely

dispersed polymer, and such feature of the claimed invention as “deaerating the initial electrochromic composition to eliminate the dissolved oxygen and air introduced together with the finely dispersed polymer is performed by evacuation” is not mentioned.

Claims 5-8:

- '431 does not mention a finely dispersed polymer. At the same time using exactly finely dispersed polymer in the claimed invention in combination with other features allows to produce initial liquid electrochromic systems in the form of long-lived suspensions and/or colloids having a high mass portion of a polymer and suitable for filling (by any of known methods) inner spaces of electrochromic devices of different destinations, including electrochromic devices having an interelectrode distance within several tens of microns. At high concentration of the finely dispersed polymer a polymer matrix is formed directly in an electrochromic device after dissolving the said polymer. The said matrix provides a property of a solid gel without a volume shrinkage and fluidity to an electrochromic layer.

Claim 17:

- in col. 25, line 66 and col. 26, lines 22-25 of '431 heating of an initial electrochromic composition is mentioned, already placed in an electrochromic device, after adding the crosslinking agent to the said composition to accelerate the crosslinking process, and the following feature of the claimed invention is not mentioned: “the dispersion medium is cooled down prior to introducing the disperse phase” to decelerate the dissolving process of the finely dispersed polymer and thus to increase duration of storing a liquid state

of the initial electrochromic composition in the form of the suspension and/or colloid suitable for filling the inner space of the electrochromic device.

Claims 18-19:

As it appears from claim 1, the closed space between the electrodes is filled with deaerated initial electrochromic composition. Therefore the features of dependent claims 18-19 can not be considered separately from claim 1, to which they are subordinated. Subsequently, in col. 25, lines 42-43 of '431 the following feature of the claimed invention is not mentioned: "deaeration of the closed space between electrodes prior to filling it with deaerated initial electrochromic composition by evacuation".

Claims 20-21:

'431 does not contain a description of an electrochromic device, produced using the claimed method.

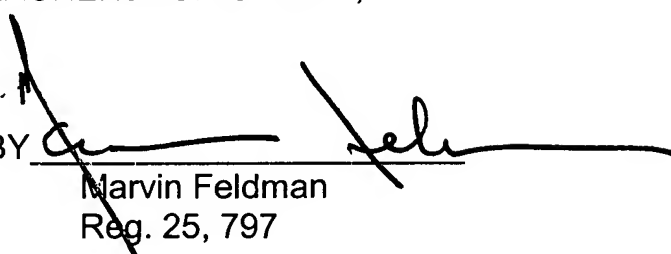
In summary, the prior art pre-polymer solution is manifestly not, a "finely dispersed polymer" dispersed in a phase and not in solution. The present invention teaches away from and provides an improvement over the Tonar et al. pre-polymer solution, which caused voids. This a fortiori defines a patentable invention.

An early allowance is respectfully requested.

Respectfully submitted,

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